# UNITED STATES PATENT AND TRADEMARK OFFICE

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/483,110 | 01/14/2000 | Faisal Haq | M-7998-US | 7946 |

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| EXAMINER |
|---|
| DUONG, FRANK |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2666 | |

DATE MAILED: 03/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 January 2000*.

2a)☐ This action is **FINAL**.     2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-51* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5, 16-20 and 31-41* is/are rejected.

7)☒ Claim(s) *6-15, 21-30 and 42-51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 January 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.  This Office Action is a response to the Preliminary Amendment dated 1/14/2000.

Claims 1-51 are pending in the application.

### *Specification*

2.  The abstract of the disclosure is objected to because of legal phraseology, i.e.

"means".

Correction is required.  See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3.  Claims 1-5, 16-20 and 31-41 are rejected under 35 U.S.C. 102(b) as being

anticipated by Wilford et al (USP 5,509,006) (hereinafter "Wilford").

Regarding **claims 1, 16 and 35**, in accordance with Wilford reference entirety,

Wilford discloses a method/system/program product comprising:

step/means for receiving at least one packet (*Fig. 2; element 201 and col. 10,*

*lines 64-65*); and

step/means for disposing of the receiving at least one packet in response to a

walk (parse) of a Balance Hash Table of Access control List Binary Comparison Trees

(tree memory 308), the Table (tree memory 308) encoding an Access Control List (*Fig. 2; element 206 and col. 16, lines 37-49*).

Regarding **claims 2, 17 and 38**, in addition to features recited in base claims 1, 16 and 35 (see rationales discussed above), Wilford further discloses (*Fig. 8 and col. 16, line 53 and thereinafter*):

step/means for constructing a hash table index value from one or more bit positions, within the received at least one packet, pointed at by one or more pointers of a Has-Table-Balancing Bit Selection Vector (*Fig. 8; element 802 and col. 16, line 53 to col. 17, line 50*); and

step/means for walking a binary comparison tree associated with the constructed hash table index value (*col. 17, lines 45-50 and thereinafter*).

Regarding **claim 3, 18 and 39**, in addition to features recited in base claims 2, 17 and 38 (see rationales discussed above), Wilford further discloses step/means for converting the Access Control List to the Balanced Hash Table of Access Control List Binary Comparison Tree, the Table encoding the Access Control List (*see Fig. 7C and col. 16, lines 46-49*).

Regarding **claim 4, 19 and 40**, in addition to features recited in base claims 3, 18 and 39 (see rationales discussed above), Wilford further discloses step/means for creating a binary comparison tree for at least one Access Control List Rule (Permission) in the Access Control List (*see Fig. 7c and col. 17, line 25-49*).

Regarding **claim 5, 20 and 41**, in addition to features recited in base claims 4, 19 and 40 (see rationales discussed above), Wilford further discloses step/means for

creating at least one node, having at least one miss branch and at least one match

branch, for at least one packet header field utilized by the at least one Access Control

List Rule in the Access Control List (*see Figs. 7C-8 and col. 19, lines 1-12*).

Regarding claims **31-34 and 36-37**, in addition to features recited in base claims

16 and 35 (see rationales discussed above), Wilford further discloses the system of Fig.

2 is a computer based system having memory (Fig. 2; element 203) corresponding to

recordable media and network interface (Fig. 2; element 201) corresponding to

transmission media.

### *Allowable Subject Matter*

4.  Claims 6-15, 21-30 and 42-51 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

5.  The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, considered individually or in combination, fails to fairly show or

suggest the claimed invention of base claims 1, 16 and 35 and further limits with the

novel limitation of step/means for "*inserting at least a part of a binary comparison tree*

*constructed for at least one Access Control List rule into a hash table entry pointed at by*

*a hash table index*", structurally and functionally interconnected with other limitations in

the a manner as recited in the dependent claims 6-15, 21-30 and 42-45.

## *Conclusion*

6. The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Bechtolsheim et al (USP 6,515,963).

Bechtolsheim et al (USP 6,377,577).

Bechtolsheim et al (USP 6,343,072).

Lakshman et al (USP 6,341,130).

Alessandri, Access Control List Processing in Hardware, Diploma Thesis, pages

1-85, October 1997.

Waldvogel et al, Scalable High Speed IP Routing Lookups, ACM, pages 25-36,

1997.

Varghese et al, Trading Packet Headers for Packet Processing, IEEE, pages

141-152, April 1996.

7. Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Frank Duong whose telephone number is (703) 308-

5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Frank Duong
Examiner
Art Unit 2666

March 1, 2004